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Toward Addressing the Social and Environmental Inequalities to Promote Smoking Cessation among Poor and Minority Populations in the United States

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Abstract

Approximately one in five Americans smoke either cigarettes or electronic cigarettes, and only about one in ten of them are able to quit smoking. To meet the Healthy People 2020 objective, comprehensive efforts are needed to promote smoking cessation. Transdisciplinary (TD) action research provides an avenue to achieve this goal. Because poor and minority populations are in essence 'trapped' in environments that impede their efforts to quit smoking, resources need to be allocated (1) to implement smoking bans, (2) to reduce tobacco retail stores and advertisements, and (3) to persuade or influence legal and legislative processes in facilitating those changes. By modifying the social and environmental factors related to smoking in home, workplace, and school settings, such efforts are more likely to promote smoking cessation among poor and minority populations. While more research is needed, TD action research would be an ideal task force to promote smoking cessation and subsequently reduce smoking prevalence.

Key Words: Smoking Cessation, Social and Environmental Inequalities, Transdisciplinary Action Research, United States

Introduction

In the United States (US), the prevalence of smoking has continued to decline since the 1960s. However, approximately one in five Americans smoke either cigarettes or electronic cigarettes (e-cigarettes) today. The prevalence of cigarette smoking and e-cigarette smoking was 14.0% and 2.8%, respectively, among adults [1], and was 8.1% and 20.8%, respectively, among high school students [2]. In order to reduce illness, disability, and death related to tobacco use and secondhand smoke exposure (the *Healthy People 2020* objective) [3], recent advancements in tobacco research have highlighted the importance of transdisciplinary (TD) research [4−6]. Transdisciplinarity is an integrative process in which researchers work jointly with a wide range of academic disciplines and professionals or practitioners in multiple fields to develop and use a shared conceptual framework that synthesizes and extends discipline-specific theories, concepts, and methods to address common health problems [7].

Building on to this new approach, there is a need for TD action research that facilitates more comprehensive translation of research findings into practice. TD action research is an extension of 'action research,' working collaboratively with community practitioners to analyze

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and meliorate societal problems, in order to integrate the characteristics of transdisciplinarity [8]. Put differently, it is the construct of a coherent multi-sector collaborative partnership to tackle complex problems from an interdisciplinary perspective and through cross-disciplinary efforts, which can be applied to reducing the prevalence of smoking (cigarettes and e-cigarettes alike). In general, a multi-sector collaborative partnership include, but not limited to (1) a team of multidisciplinary researchers, (2) community leaders and representatives, (3) non-profit organizations and private sectors (e.g., landlords and retail owners), (4) public sector legislative bodies (e.g., council members and mayoral offices), and (5) executive departments (e.g., city planning and public health departments). Since health promotion strategies are aimed to make a healthy lifestyle an easier choice [9], one of the important aspects of TD action research is to promote an environment that enables people to make decisions to stop smoking and to never try smoking in the first place. Such efforts need to integrate social ecological theory [10−12] to effectively modify the social and physical environments in which people live and work or attend school.

To reduce the prevalence of smoking, prevention and intervention strategies focused on the initiation of smoking among adolescents are undoubtedly imperative, as only about one in ten American smokers are able to quit smoking. The prevalence of successful smoking cessation was 6.2% among adults [13] and was 12.2 % among adolescents [14]. Given the difficulties of smoking cessation due to withdrawal symptoms, cravings, and urges to smoke during a quit attempt [15], comprehensive efforts are needed to promote smoking cessation, and thus to reduce smoking prevalence. Because a combination of the social and physical environments influence smoking behaviors (i.e., smoking and smoking cessation), TD action research must focus on the daily life environment, around the home and workplace or school settings (1) to implement smoking bans, (2) to reduce tobacco retail stores and advertisements, and (3) to intervene on legal and legislative processes in facilitating those changes. The key is to focus on the inequalities therein that impede poor and minority populations from quitting smoking. While more research is needed to investigate other potential barriers, TD action research would be an ideal task force to ensure the successful translation of knowledge into practice thereby to promote smoking cessation.

Implementation of Smoking Bans to Promote Smoking Cessation

Smoking cessation can be, in part, confounded by the behavior of members of the surrounding social environment. In the US, smoking behaviors have shown to spread through close and distant social ties; smoking and smoking cessation, respectively, were related to smoking and smoking cessation by a spouse, parents, siblings, friends, coworkers, and/or classmates [16, 17]. Because the presence of smokers during an attempt to quit can trigger a relapse, enforcing smoking bans is likely to promote smoking cessation. A number of research findings have shown the importance of smoking bans in altering the social influences on smoking behaviors.

In the US, for example, home smoking bans were associated with higher rates of smoking cessation, lower daily cigarette consumption, and lower rates of relapse among adults [18−20]. Because parental smoking behaviors strongly influence their children's smoking behaviors [21−23], home smoking bans were associated with lower rates of smoking initiation and higher rates of smoking cessation among adolescents [22, 23]. Home smoking bans also led to a greater perceived disapproval of smoking and lower rates of progression to smoking experimentation among adolescents [24, 25]. Among adult smokers, workplace smoking bans were associated with lower rates of smoking, lower daily cigarette consumption, and higher rates of

smoking cessation [26−29]. Both smoking bans in the home and workplace were related to higher rates of quit attempt, lower rates of relapse, and higher rates of light smoking among adult smokers [30, 31]. Among adolescents, smoking restrictions and policies at school were associated with lower smoking prevalence, lower probability to smoke, lower daily cigarette consumption, and greater perceived disapproval of smoking [32−35]. Both home and school smoking bans were related to lower smoking prevalence among adolescents [36].

Despite the benefits of smoking bans at home, workplace, and school settings, such bans are not consistently enacted across the US population. For instance, among households with children and smokers, the adaptation of home smoking bans increased in recent years, but only half of them had such bans; home smoking bans were less common among less educated households, in families with older children, among non-Hispanic blacks, and in states with higher smoking prevalence [37]. Similarly, the adoption of smoke-free policies increased in all occupational settings, but while more than three quarter of white-collar workers were covered with workplace smoke-free policy, only about half of blue-collar and service workers were covered with such a policy [38]. The adoption of workplace smoke-free policy varied significantly by state [39], and were less common in southern states [40]. The state-by-state variations in smoking policy also have implications in school settings. Compared with students living in and attending school in states with strict smoking regulations, students in states with no or minimal smoking restrictions were more likely to smoke [41, 42]. Even in a state where all middle and high schools had in place formal anti-smoking policies, the strictness of smoking policy varied by school [43].

While not all studies directly examined the influences on smoking cessation, research findings in the US suggest that poor and minority populations living in states without strict smoking policies are more vulnerable to the social influences on smoking. To address such inequalities in smoking, TD action research need to implement smoking bans in which poor and minority populations live and work or attend school. Such efforts are likely to affect the social influences that encourage smoking and impede smoking cessation efforts.

Reduction of Tobacco Retail Stores and Advertisements to Promote Smoking Cessation

Smoking cessation can be, in part, confounded by people's response to their surrounding physical environments. Cravings and urges to smoke can be induced by what people see [44, 45]. In the US, it is widely acknowledged that tobacco companies conduct marketing campaigns to effectively capture people's attention and stimulate their desire to smoke cigarettes [46, 47]. Because the availability of tobacco products in retail stores and the visibility of advertisements during a quit attempt can trigger smoking relapse, reducing those obstacles is likely to promote smoking cessation. A number of research findings have shown the significance of environmental influences on smoking behaviors.

In the US, similar to the social inequalities in smoking (as described above), poor and minority populations are also influenced by the environmental inequalities that exist around their home, workplace, and school settings. For example, a higher density of tobacco retail stores has been found in neighborhoods with poor and minority populations, which are primarily Hispanic or non-Hispanic black [48−51]. Disadvantaged neighborhoods with a higher density of tobacco retail stores were associated with higher smoking prevalence among adults [52] and among adolescents [53]. Adults living closer to tobacco retail stores were less likely to succeed in smoking cessation [54]. Because of easier access to tobacco products, adolescents living in neighborhoods with higher density of tobacco retails stores were more likely to start smoking

[55]. Higher accessibility to tobacco products within a neighborhood was also associated with higher rates of smoking among older adolescents [56]. While less is known about the influence of tobacco retail stores around the workplace among adults, higher density of tobacco retail stores near schools was associated with higher prevalence of school smoking and smoking among adolescents [57]. Adolescents attending a school surrounded by higher density of tobacco retail stores were more likely to initiate smoking, and they were more likely to buy cigarettes from those retail stores [58].

In addition to easier accessibility to and higher availability of tobacco products, poor and minority populations are also vulnerable to tobacco advertisements that encourage smoking. Across the US, more billboards containing tobacco advertisements have been found in neighborhoods with poor and minority populations [59–61], as well as within a close proximity to schools, playgrounds, and churches in those neighborhoods [62, 63]. The prevalence and extent of tobacco advertisements increased in and around the tobacco retail stores [64]. In stores where adolescents shopped frequently, the tobacco advertisements were more prevalent than those in stores where adolescents shopped less frequently [65]. While less is known about the influence of tobacco advertisements on adults, the influences on adolescents are stark. Higher exposure to tobacco advertisements in stores increased the odds of smoking initiation among adolescents; tobacco advertisements and promotions, respectively, increased the likelihood of adolescents to initiate smoking and to become regular smokers [66]. Receptivity to tobacco advertisements and promotions during young adolescence was a predictor of established smokers in their young adulthoods [67]. Pro-smoking media and advertisements increased the susceptibility of adolescents to smoking over time, and anti-tobacco advertisements were insufficient to overcome such harmful effects [68]. Tobacco advertising strategies also appear to undermine parental efforts in preventing their children from smoking [69].

While not all studies directly examined the influences on smoking cessation, research findings in the US suggest that poor and minority populations living in disadvantaged neighborhoods are more vulnerable to the environmental influences on smoking. To address such inequalities in smoking, TD action research need to reduce tobacco retail stores and advertisements in which poor and minority populations live and work or attend school. Such efforts are likely to affect the environmental influences that encourage smoking and impede smoking cessation efforts.

Legal and Legislative Intervention to Promote Smoking Cessation

Smoking cessation can be, in part, confounded by the lack of supportive resources. In the US, smokers with sufficient resources to aid their quitting attempts were associated with higher rates of smoking cessation [70, 71]. While smoking cessation aids (e.g., counseling and pharmacotherapies) have shown to increase cessation rates [72, 73], their cost can be a significant barrier [74]. Non-Hispanic black and Hispanic smokers were less likely to receive advice from health professionals and to use cessation aids [75, 76]. In conjunction with the implications of social and environmental inequalities in smoking (as described above), poor and minority populations are in essence ‘trapped’ in environments that impede their efforts to quit smoking.

Given the social, environmental, and economic constrains that are imposed on poor and minority populations, TD action research need to allocate resources to address inequalities in smoking and to promote smoking cessation. Such efforts need to aim at persuading legislatures and specialized bodies (e.g., planning boards, zoning boards, and administrative boards) to implement smoking bans and to reduce tobacco retail stores and advertisements in which poor

and minority populations live and work or attend school. Because the creation of smoke-free environments remains controversial in local and state governments [77], legislative interventions are the key component for more comprehensive tobacco control [78]. Without active involvement in legal, legislative, and decision-making processes, the success of TD action research would be limited, and the sustainability of any interventions would be diminished. In other words, the better the team of TD action research can improve their competence and increase their capacity in understanding the language and practice of legal, legislative, and decision-making processes, the better the team of TD action research can address social and environmental inequalities in smoking to promote smoke-free environments. Since public health advocates have rarely been involved in the process of shaping the built environment [79], TD action research is an ideal task force to ensure the successful translation of knowledge into practice, and to promote smoking cessation among poor and minority populations.

In doing so, however, there are practical challenges that need to be addressed. For instance, the judicial decisions on local tobacco ordinances vary by state, and may pose a challenge to anti-smoking advocates hoping to carry out legislative interventions. While the US local ordinances are generally stronger and more comprehensive than state statues, there are many cases in which local ordinances restricting smoking were preempted by a statewide law [80]. This is, in part, due to state-level litigation overstates statues regulating tobacco use. For this reason, legal processes are not a general solution; it should not be assumed that local governments have the same power to promote and protect the public from the risks of tobacco in all states, and that local ordinances regulating control need to be tailored according to the requirements of each state's statues [80]. In principle, the appropriate course of action depends on criteria expressed in or inferred from high courts; tobacco regulations tend to be viewed as non-legal issues, and thus advancing public health as a legal criterion is crucial to make a difference over the long term [81]. Because legal, legislative, and decision-making processes are complex, TD action research need to more deeply grasp the nuanced relationship between the law and public health practices.

Beyond what can be identified, various practical challenges arise once a TD action research team intervenes using legal and legislative processes. Such challenges would not be documented to be prepared in advance, and significant time and resources would be needed to understand the specificities of the relevant legal, legislative, and decision-making processes. However, this precisely underscores the importance of transdisciplinarity in the multi-sector collaborative partnership to ensure the successful translation of knowledge into practice. TD action research is an ideal task force to achieve such a goal.

Conclusion

Based on the corpus of research findings in the US, poor and minority populations are in essence 'trapped' in environments that impede their efforts from quitting smoking (cigarettes and e-cigarettes alike). Because "people make places, and places make people," TD action research aimed at modifying the social and environmental inequalities in smoking holds great promise to promote smoking cessation, and thus to reduce smoking prevalence. It is necessary to address this problem from an interdisciplinary perspective and through cross-disciplinary efforts, and resources need to be allocated around the environments in which poor and minority populations live and work or attend school (1) to implement smoking bans, (2) to reduce tobacco retail stores and advertisements, and (3) to persuade or influence legal and legislative processes in facilitating those changes. While more research is needed to address other potential barriers, TD action research would be an ideal task force to ensure the successful transla-

tion of knowledge into practice thereby promoting smoking cessation.

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